

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

07/16/99
Jc617 U.S. PTO
09/354594

BUCKET NUMBER	ANTICIPATED CLASSIFICATION OF THIS APPLICATION:		PRIOR APPLICATION	
	CLASS	SUBCLASS	EXAMINER	ART UNIT
868USD1			Kim	2874

CERTIFICATE UNDER 37 CFR 1.10

"Express Mail" mailing label number: EL340898341US
Date of Deposit: July 16, 1999

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

By Hasson Buie
Name: Hasson Buie

Jc617 U.S. PTO
09/354594
07/16/99

DIVISIONAL APPLICATION UNDER 37 C.F.R. § 1.53(b)

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

This is a request for filing a divisional application under 37 CFR § 1.53(b) of Serial No. 08/971,421, filed on November 17, 1997 entitled OPTICAL CABLE EXIT TROUGH by the following inventor(s):

Full Name Of Inventor	Family Name Haataja	First Given Name Timothy	Second Given Name Jon
Residence & Citizenship	City Prior Lake	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
Post Office Address	Post Office Address 18935 Natchez Avenue	City Prior Lake	State & Zip Code/Country Minnesota 55372 U.S.A.
Full Name Of Inventor	Family Name Kampf	First Given Name Thomas	Second Given Name Walter
Residence & Citizenship	City Minnetonka	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
Post Office Address	Post Office Address 5606 Pompano Drive	City Minnetonka	State & Zip Code/Country Minnesota 55343

- ☒ Enclosed is a copy of the prior application; including the specification, claims, drawings, oath or declaration showing the applicant's signature, and any amendments referred to in the oath or declaration filed to complete the prior application. (It is noted that no amendments referred to in the oath or declaration filed to complete the prior application introduced new matter therein.) The continuing application is as follows: 7 pages of specification, 7 claims, 1 pages of abstract, 16 sheets of drawings, and 8 pages of oath or declaration.
- ☒ The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
- ☒ Cancel original claims 1-4 of this application before calculating the filing fee. (At least one original independent claim must be retained for filing purposes.)
- ☒ The filing fee is calculated below:

CLAIMS AS FILED

NUMBER FILED	NUMBER EXTRA		RATE	FEE
TOTAL CLAIMS: 3 -20	0	x	\$18.00	\$0.00
INDEPENDENT CLAIMS 1 -3	0	x	\$78.00	\$0.00
			BASIC FILING FEE:	\$760.00
			TOTAL FILING FEE:	\$760.00

☐ A Verified Statement that this filing is by a small entity is already filed in the prior application.

☐ A Verified Statement that this filing is by a small entity is attached.

4.



Payment of fees:



Attached is a check in the amount of \$760.00 .



Please charge Deposit Account No. 13-2725.



The Commissioner is hereby authorized to charge any additional fees as set forth in 37 CFR §§ 1.16 to 1.18 which may be required by this paper or credit any overpayment to Account No. 13-2725.



Amend the specification by inserting before the first line the sentence:

"This application is a Divisional of application Serial No. 08/971,421, filed November 17, 1997, which application(s) are incorporated herein by reference."



A set of formal drawings (____ sheets) is enclosed.



Priority of application Serial No. _____, filed on _____ in _____, is claimed under 35 U.S.C. 119.



The certified copy has been filed in prior application Serial No. _____, filed _____.

9.



The prior application is assigned of record to ADC Telecommunications, Inc. located at 12501 Whitewater Drive, Minnetonka, Minnesota 55343.

10.



The Power of Attorney in the prior application is to:

Merchant & Gould P.C.
3100 Norwest Center
90 South Seventh Street
Minneapolis, MN 55402-4131

11.



A preliminary amendment is enclosed. (Claims added by this amendment have been properly numbered consecutively beginning with the number next following the highest numbered original claim in the prior application.)



Fee for excess claims is attached.

12. ☐ A petition and fee has been filed to extend the term in the prior application until _____. A copy of the petition for extension of time in the prior application is attached.
13. ☐ The inventor(s) in this application are less than those named in the prior application and it is requested that the following inventors identified above for the prior application be deleted:
14. ☒ Also Enclosed: Information Disclosure Statement, PTO Form 1449 and copies of cited references.
15. ☒ Address all future communications to the **Attention of Steven C. Bruess** (may only be completed by attorney or agent of record) at the address below.
16. ☒ A return postcard is enclosed.

Respectfully submitted,

MERCHANT & GOULD P.C.
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Date July 16, 1999 Steven C. Bruess
Steven C. Bruess
Reg. No. 34,130

OPTICAL CABLE EXIT TROUGH

Field of the Invention

5 The invention pertains to a system for the management and routing of optical fiber cables.

Background of the Invention

In the telecommunications industry, the use of optical fibers for signal transmissions is accelerating. With the increased utilization of optical fiber systems, optical fiber cable management requires industry attention.

10 One area where optical fiber management is necessary is the routing of optical fibers from one piece of optical fiber equipment to another. For example, in a telecommunications facility, optical fiber cables may be routed between fiber distribution equipment and optical line terminating equipment. In buildings and other structures which carry such equipment, the cable routing can take place in concealed
15 ceiling areas or in any other manner to route cables from one location to another.

When routing optical fibers, it is desirable that any routing system will be readily modifiable and adaptable to changes in equipment needs. Accordingly, a routing system is not practical which would require a high capital outlay and which could not be readily adapted to changes in a customer's needs. Namely, if routing
20 paths, once established, are forever fixed, the system cannot adapt. Also, and perhaps most important, any routing system must protect optical fibers from damage. In the use of optical fibers, it is recognized that the fibers should not be bent beyond a minimum radius of curvature. For example, it is commonly recognized that optical fibers should not be bent in a radius of less than 1.5 inches.

Summary of the Invention

According to preferred embodiments of the present invention, a cable routing system is disclosed for routing optical fiber cables between optical transmission equipment. The system includes a lateral trough section configured for defining a cable pathway. An exit trough is mountable to the lateral trough section to provide a cable exit pathway from the lateral trough section. The exit trough includes a bracket portion mountable to a top edge of the lateral trough section. Two curved lead-ins on opposite ends of the bracket portion each define a cable pathway leading to an exit trough portion extending from a middle of the bracket portion in a direction away from the lateral trough section. The exit trough portion includes a convexly curved bottom trough surface, and two convexly curved upstanding sides on opposite sides of the bottom trough surface. The exit trough defines a cable pathway leading upwardly and away from the lateral trough section. The exit trough is mountable to the lateral trough section without modification to the lateral trough section. The exit trough can be placed generally at any location along the lateral trough section, and can be placed during initial system setup, or at a later time as the need arises for an exit pathway from the lateral trough section, such as when new optical transmission equipment is added to the system. At least one fastener secures the bracket portion to the lateral trough section. The exit trough may include a downspout portion defining a downwardly directed cable pathway, or a horizontal portion defining a horizontally directed cable pathway, or other directional pathway as desired.

Brief Description of the Drawings

FIG. 1 is a top, front, and left side perspective view of a lateral trough section and an exit trough mounted thereto according to one preferred embodiment of the present invention.

FIG. 2 is a bottom, back, and right side perspective view of the first embodiment.

FIG. 3 is a back view of the first embodiment.

FIG. 4 is a front view of the first embodiment, and showing the lateral trough section in cross-section through a middle of the lateral trough section.

FIG. 5 is a left side view of the first embodiment.

FIG. 6 is a top view of the first embodiment.

5 FIG. 7 is a bottom view of the first embodiment.

FIG. 8 is a left cross-sectional side view through the center of the lateral trough section and through the exit trough.

FIG. 9 is a top, front, and left side perspective view of a lateral trough section and an exit trough mounted thereto according to the second preferred
10 embodiment of the present invention.

FIG. 10 is a bottom, back, and right side perspective view of the second embodiment.

FIG. 11 is a back view of the second embodiment.

FIG. 12 is a front view of the second embodiment, and showing the
15 lateral trough section in cross-section through a middle of the lateral trough section.

FIG. 13 is a left side view of the second embodiment.

FIG. 14 is a top view of the second embodiment.

FIG. 15 is a bottom view of the second embodiment.

FIG. 16 is a left cross-sectional side view through the center of the lateral
20 trough section and through the exit trough.

Detailed Description of the Preferred Embodiments

Referring now to FIGS. 1-8, a first embodiment of an exit trough 100 is shown mounted to a lateral trough section 20. Lateral trough section 20 defines a cable pathway 22 for routing optical fiber cables between locations. Lateral trough section 20
25 and exit trough 100 can be part of a cable routing system typically within a structure, such as a building having optical fiber signal transmitting equipment. Lateral trough section 20 typically is suspended from a ceiling structure by any suitable means (not shown). U.S. Patent Nos. 5,067,678 and 5,316,243 disclose various cable routing

systems, including lateral trough sections like lateral trough section 20 illustrated in FIGS. 1-8. Exit trough 100 is not only usable with lateral trough section 20 shown in FIGS. 1-8, but also with other cable routing systems disclosed in U.S. Patent Nos. 5,067,678 and 5,316,243, the disclosures of which are hereby incorporated by reference,
5 and other cable routing systems.

Generally, lateral trough section 20 includes first and second upstanding sides 24, 26, and a bottom 28 extending therebetween and defining cable pathway 22. Side 24 includes a top edge 30. Opposite side 26 also includes similar top edge 32. Lateral trough section 20 includes a plurality of attachment members 34 on an outside
10 portion for use in attaching lateral trough sections 20 together end to end, or adding other system hardware.

As will be described below, exit trough 100 mounts to lateral trough section 20 adjacent to top edge 30 of side 24 through attachment member 34. Exit trough 100 creates a cable exit pathway from lateral trough section 20.

Exit trough 100 includes a bracket portion 102 including an outer
15 projecting member 104, an inner projecting member 106, and a connecting member 108. Bracket portion 102 generally defines a U-shape for receipt of a portion of side 24 such that top edge 30 is positioned adjacent to connecting member 108. Exit trough 100 conveniently and securely mounts to lateral trough section 20 via one or more fasteners
20 170 positioned through outer projecting member 104 and engaged with attachment member 34 of lateral trough section 20, as shown in FIGS. 2, 3, and 5-8. As shown in FIGS. 2 and 3, outer projecting member 104 includes separate spaced apart portions 104a, 104b, 104c. Alternatively, the individual portions 104a-c could be constructed as a single piece. Portion 104a includes a slot 172 for receipt of fastener 170 during
25 assembly. The other portions 104b and 104c include similar slots.

For protection of the optical fiber cables, inner projecting member 106 of bracket portion 102 includes tapered ends 110, 112, and a tapered middle 114. Bracket portion 102 generally extends from a first end 116 to a second end 118. A middle 120 is positioned between the first and second ends 116, 118. At first and second ends 116,

118, two cable lead-ins 124, 134 are provided. First lead-in 124 includes an upper surface portion 126 having an upwardly curved shape. A downwardly depending flange 128 extends toward bottom 28 of lateral trough section 20. Flange 128 is spaced apart from inner projecting member 106 of bracket portion 102 to define a cable pathway 130.

5 Second lead-in 134 at an opposite end of bracket portion 102 faces in an opposite direction to first lead-in 124. Second lead-in 134 includes a similarly configured upwardly curved surface 136, and a downwardly depending flange 138 defining a cable pathway 140 for cables entering exit trough 100 from an opposite end of lateral trough section 20.

10 Exit trough 100 includes an exit trough portion 144 extending from bracket portion 102 at middle 120 away from lateral trough section 20. Exit trough portion 144 includes a bottom trough surface 146 and upstanding sides 148, 150 on opposite sides of bottom trough surface 146. Generally bottom trough surface 146 extends upwardly and away from top edge 30 of lateral trough section 20, and includes
15 a convex shape. Upstanding sides 148, 150 extend from each respective lead-in 124, 134, and also define convex shapes. Exit trough portion 144 defines a cable pathway 152 linked to cable pathway 22 of lateral trough section 20 via cable pathways 130, 140 of lead-ins 124, 134.

In exit trough 100, exit trough portion 144 links lateral trough section 20
20 to a downspout 160. Downspout 160 generally provides a cable pathway for cable exiting in a downward direction relative to lateral trough section 20. Downspout 160 is supported by two side ribs 164 and a center rib 166 connected to bracket portion 104b.

With exit trough 100 mounted to lateral trough section 20, cable
extending generally horizontally to the ground through lateral trough section 20 is
25 allowed to route upwardly and away from lateral trough section 20, and then to route downwardly through downspout 160 for connection to optical transmission equipment, or other uses. Downspout 160 is connectable via any suitable means to other cable routing components, such as vertical troughs or conduit, as desired. The various curves

provided with exit trough 100 help protect the optical fiber cables from being bent beyond a minimum radius of curvature.

Referring now to FIGS. 9-16, a second embodiment of an exit trough 200 is shown. Like parts to parts in exit trough 100 are identified by the same reference numerals noted above for exit trough 100. Exit trough 200 differs in two main respects. First, instead of downspout 160, second exit trough 200 includes a horizontal portion 202 leading from exit trough portion 244. Horizontal portion 202 includes a generally horizontal bottom 204 and two upstanding sides 206, 208 leading from exit trough portion 244. Two side ribs 264, and a center rib 266 extending from bracket portion 102 support horizontal portion 202. Horizontal portion 202 is useful for linking lateral trough section 20 to other cable routing components interconnectable to horizontal portion 202 through any suitable means. Fastener recesses 210 are shown as one example of suitable structures for mounting to other components.

A second main difference between the second exit trough 200 and the first exit trough 100, is that lead-ins 224, 234 and exit trough portion 244 are sized to define larger cable pathways 230, 240, and 252. Specifically, upper surface portions 226, 236 and flanges 228, 238 are sized for defining the larger pathways 230, 240 relative to pathways 130, 140 of first exit trough 100. Also upstanding sides 248, 250 are taller and spaced further apart to define larger pathway 252 relative to pathway 152 of first exit trough 100. This illustrates that relative sizes of the features of exit troughs 100, 200 can be varied depending on the cable routing needs in the system.

Each of the disclosed exit troughs 100, 200 allows for exit pathways from the lateral trough section 20 without modification to the lateral trough section 20. This is useful during initial system setup, and also during modifications of the system at later dates. Exit troughs 100, 200 can be added at any time quickly and easily. Cable damage is avoided since any cables in lateral trough section 20 are not disturbed and do not have to be moved when exit troughs 100, 200 are added. Also, simple fasteners are all that is needed to mount the bracket portion 102 of the exit troughs 100, 200 to the lateral trough section 20. In addition to the downspout 160, and the horizontal portion

202, other directional components are possible from exit trough portions 144, 244 of each exit trough 100, 200.

Having described the present invention in a preferred embodiment, modifications and equivalents may occur to one skilled in the art. It is intended that
5 such modifications and equivalents shall be included within the scope of the claims which are appended hereto.

Patent Office

WHAT IS CLAIMED IS:

1. A cable exit trough mountable to a lateral trough section, the lateral trough section including an upstanding side terminating in a top edge, the exit trough comprising:

a U-shaped bracket portion sized to receive a portion of the upstanding side of the lateral trough section adjacent to the top edge of the lateral trough section;

the bracket portion including an outer projecting member, an inner projecting member and a connecting member to form the U-shaped bracket portion, the outer projecting member positionable outside the lateral trough section, the outer projecting member configured for receipt of a fastener engageable with the lateral trough section, the inner projecting member positionable inside the lateral trough section, the connecting member positionable adjacent to the top edge of the lateral trough section, the bracket portion including first and second ends, and a middle therebetween;

first and second lead-in portions extending upwardly from the bracket portion at the first and second ends, respectively, each lead-in portion converging toward the other lead-in portion and extending in an upward direction when the exit trough is mounted to the lateral trough section, each lead-in portion including a downwardly depending flange defining a cable pathway between the flange and the inner projecting member of the bracket portion;

an exit trough portion extending from the middle of the bracket portion in a direction away from the lateral trough section when the exit trough is mounted to the lateral trough section, the exit trough portion defining a cable pathway in communication with each cable pathway of each lead-in portion, the exit trough portion including a convexly curved bottom trough surface, and two convexly curved, upstanding side surfaces on opposite sides of the bottom trough surface.

2. The cable exit trough of claim 1, wherein the exit trough portion is a first exit trough portion, and further comprising a second exit trough portion communicating with the first exit trough portion, the second exit trough portion having a downwardly curved

shape defining a downspout when the exit trough is mounted to the lateral trough section.

3. The cable exit trough of claim 1, wherein the exit trough portion is a first exit trough portion, and further comprising a second exit trough portion communicating with the first exit trough portion, the second exit trough portion having a lateral portion defining a generally horizontally extending section when the exit trough is mounted to the lateral trough section.

4. The cable exit trough of claim 1, further comprising a fastener and a lateral trough section, the lateral trough section including a bottom portion and two upstanding sides, each side terminating in a top edge, the fastener mounting the bracket portion to one of the sides wherein the inner and outer projecting members of the bracket portion receive the side with the connecting member of the bracket portion adjacent to the top edge of the side, the exit trough defining a cable pathway leading upwardly and away from the lateral trough section.

5. A method of assembling a cable routing system comprising the steps of:
providing a lateral trough section;
mounting a cable exit trough to a top edge of the lateral trough section;
routing a cable from the lateral trough section upwardly and transversely to the exit trough.

6. The method of claim 5, wherein the cable passes through the exit trough and passes in a downward direction relative to the lateral trough section as the cable exits the exit trough.

7. The method of claim 5, wherein the cable passes through the exit trough and passes in a horizontal direction relative to the lateral trough section as the cable exits the exit trough.

5

10

[illegible]

Printed name: Hassan Bari

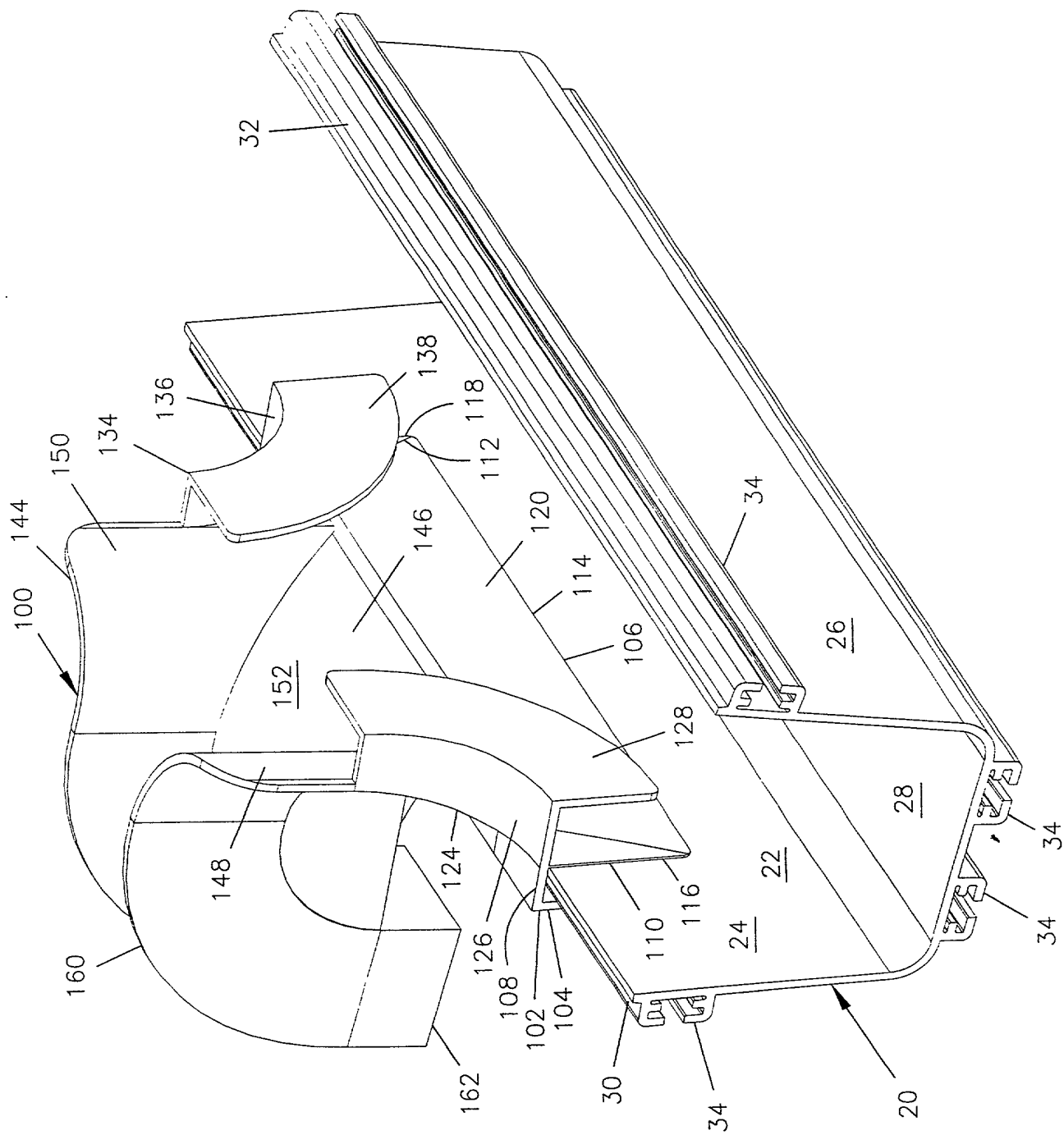


FIG. 1

FIG. 2

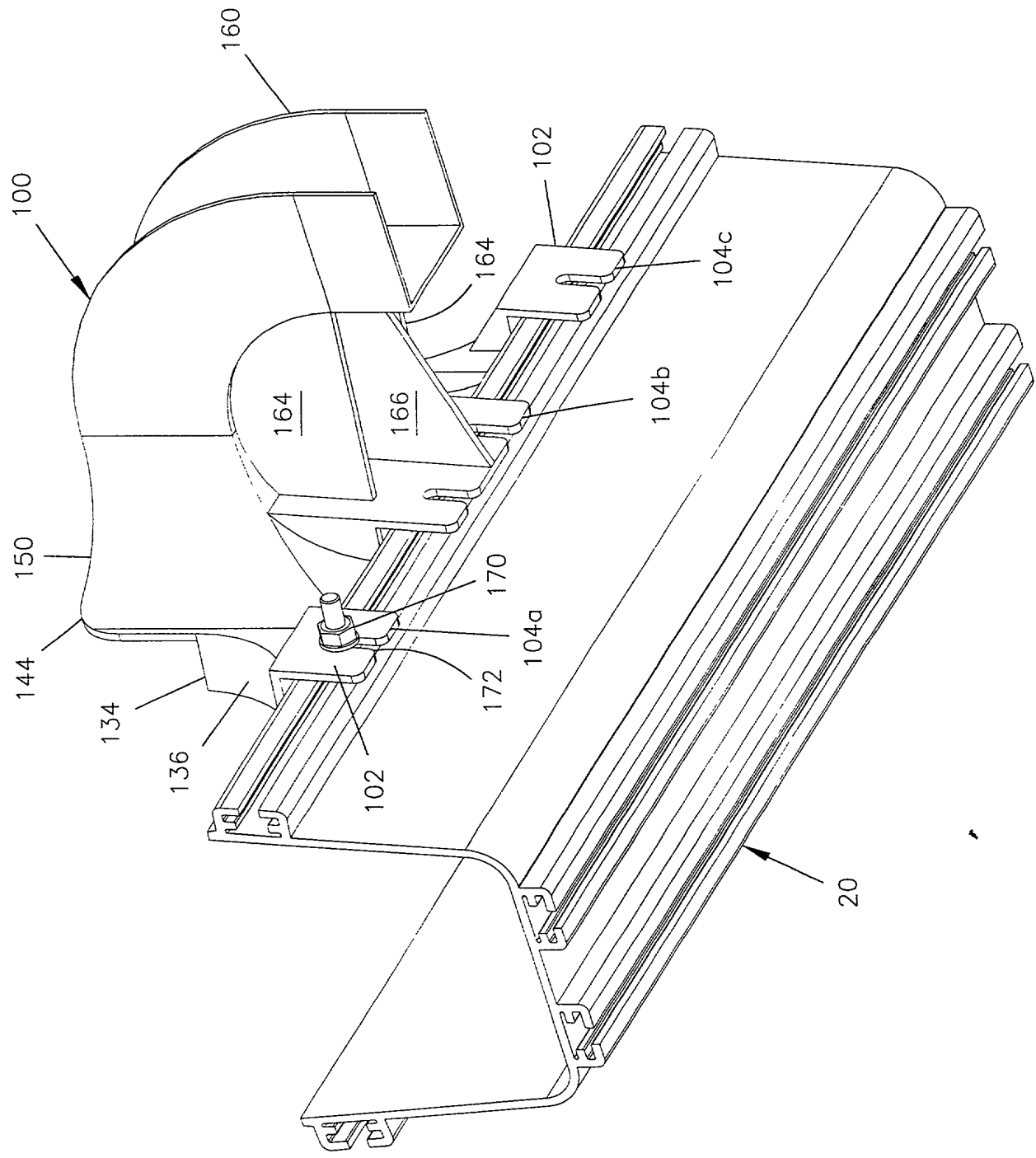


FIG. 3

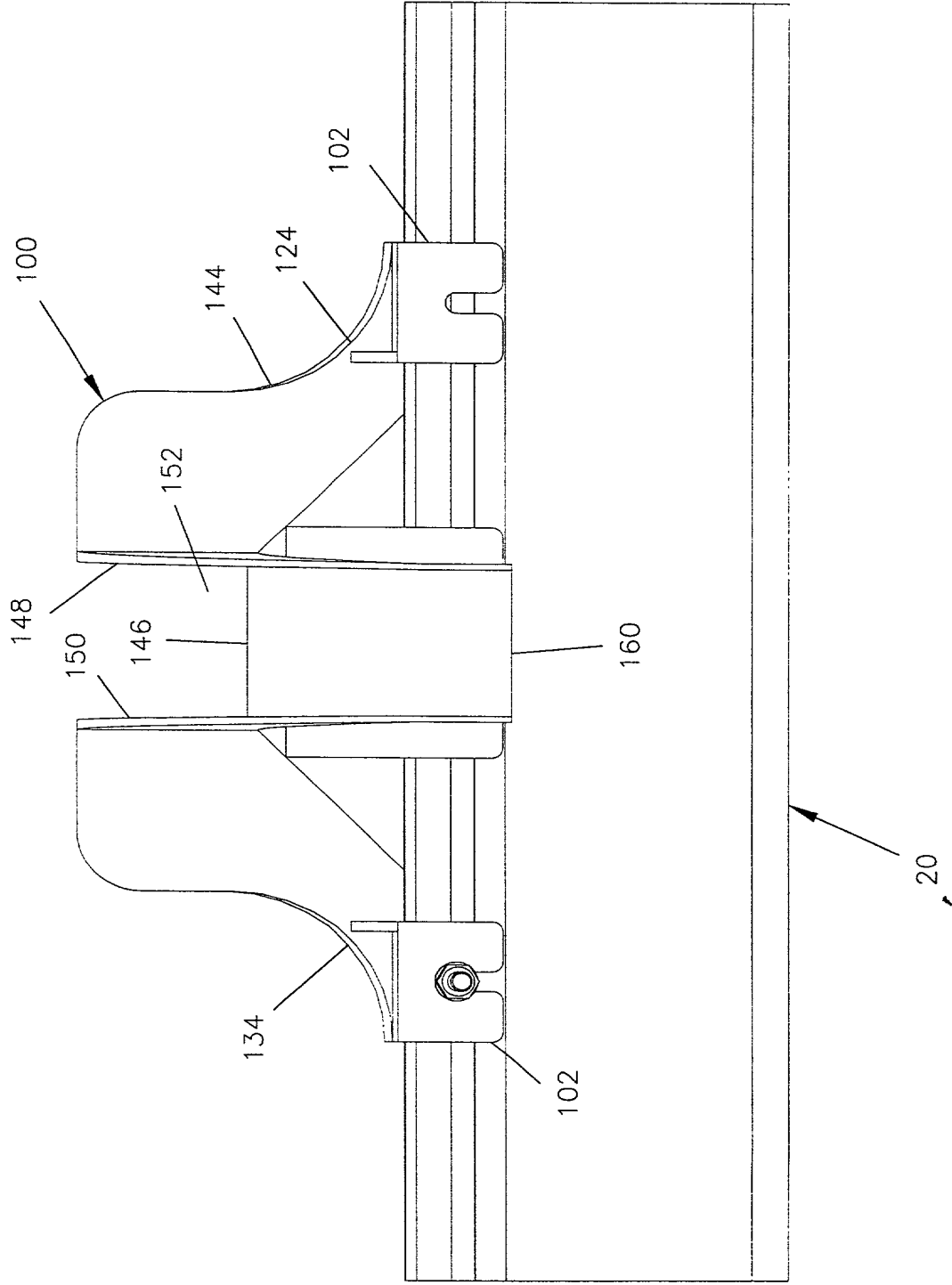


FIG. 5

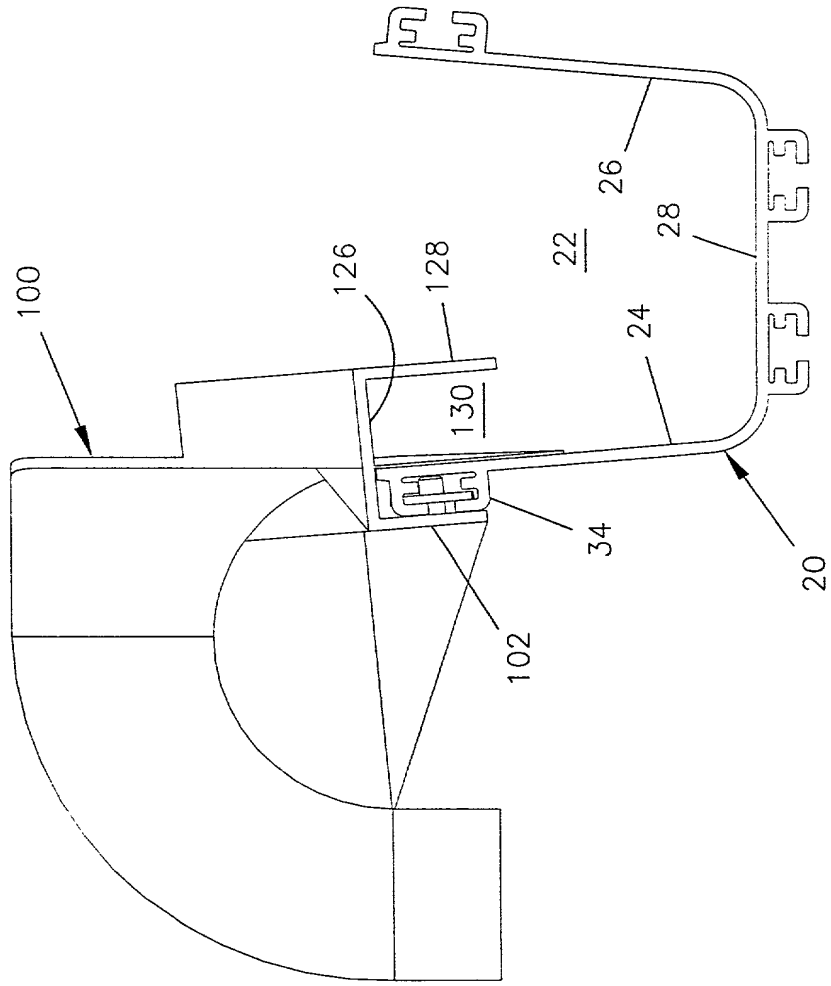


FIG. 6

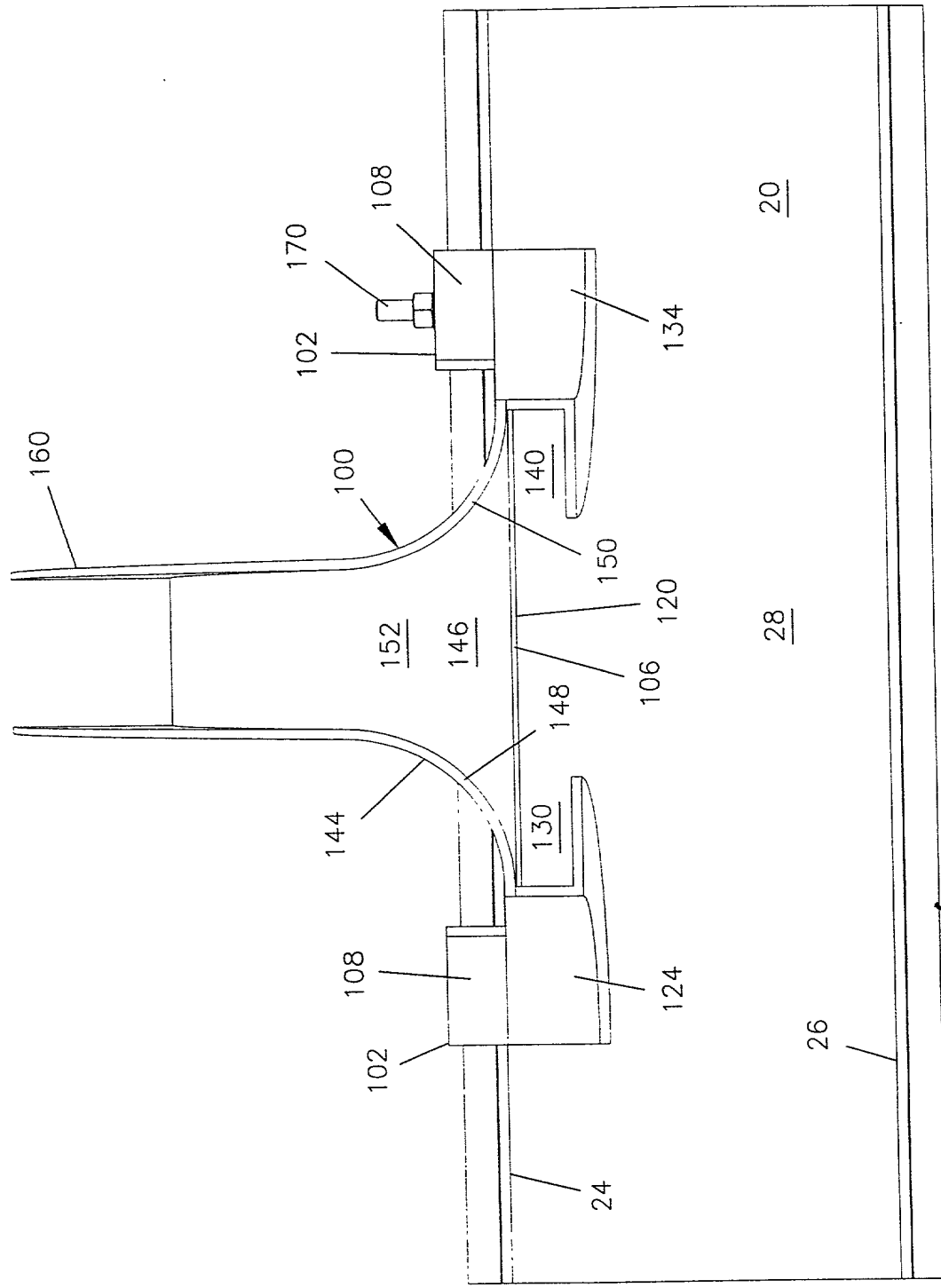


FIG. 7

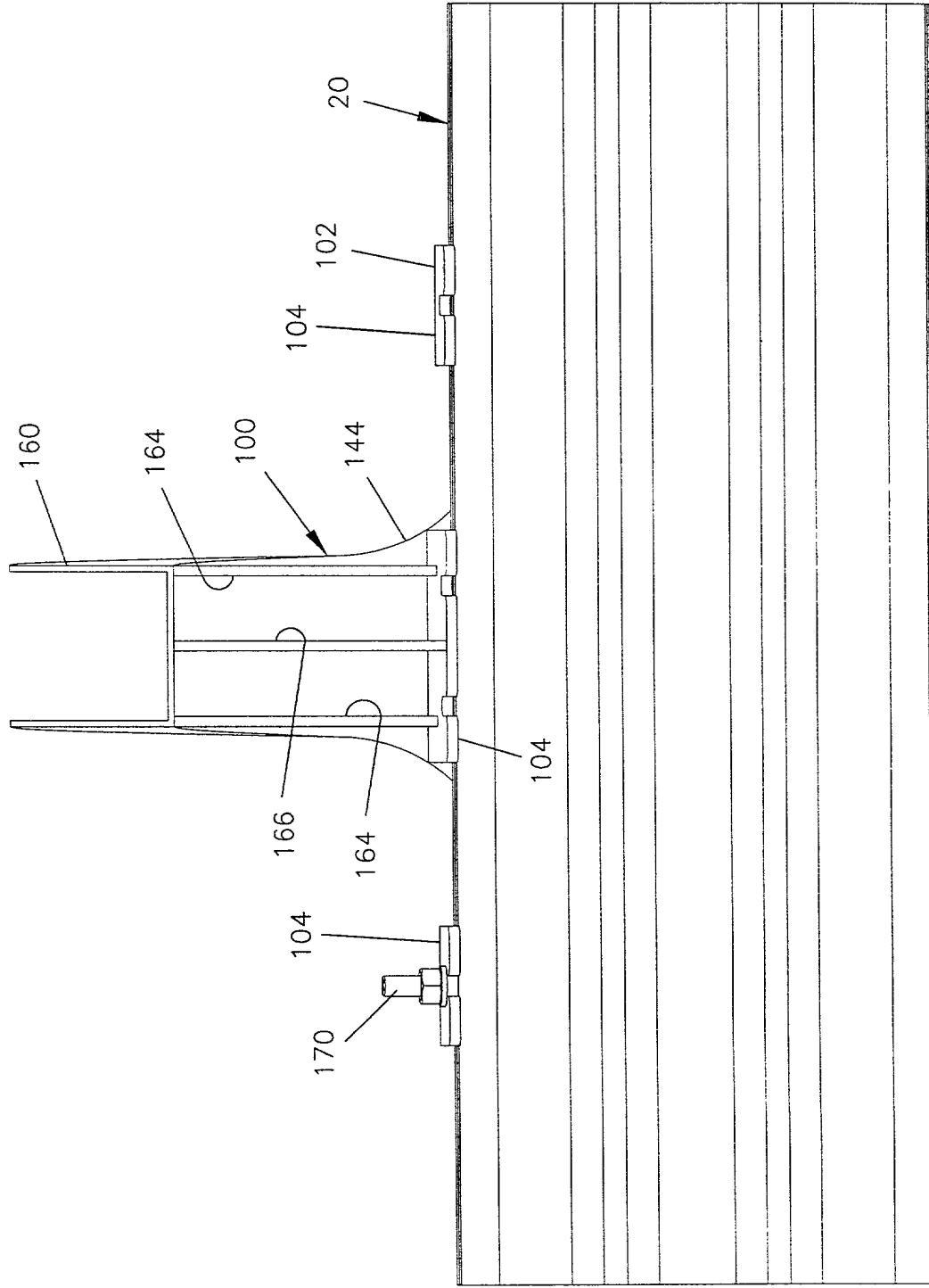


FIG. 8

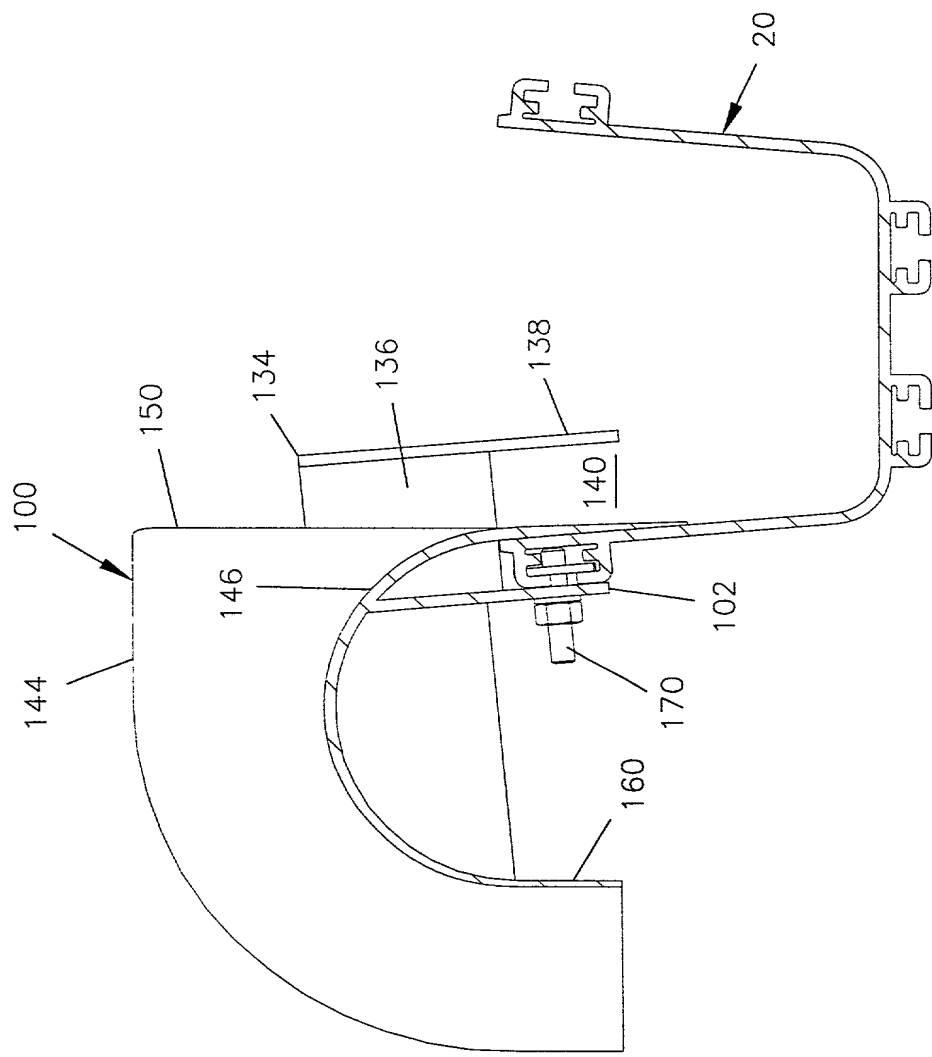


Fig. 9

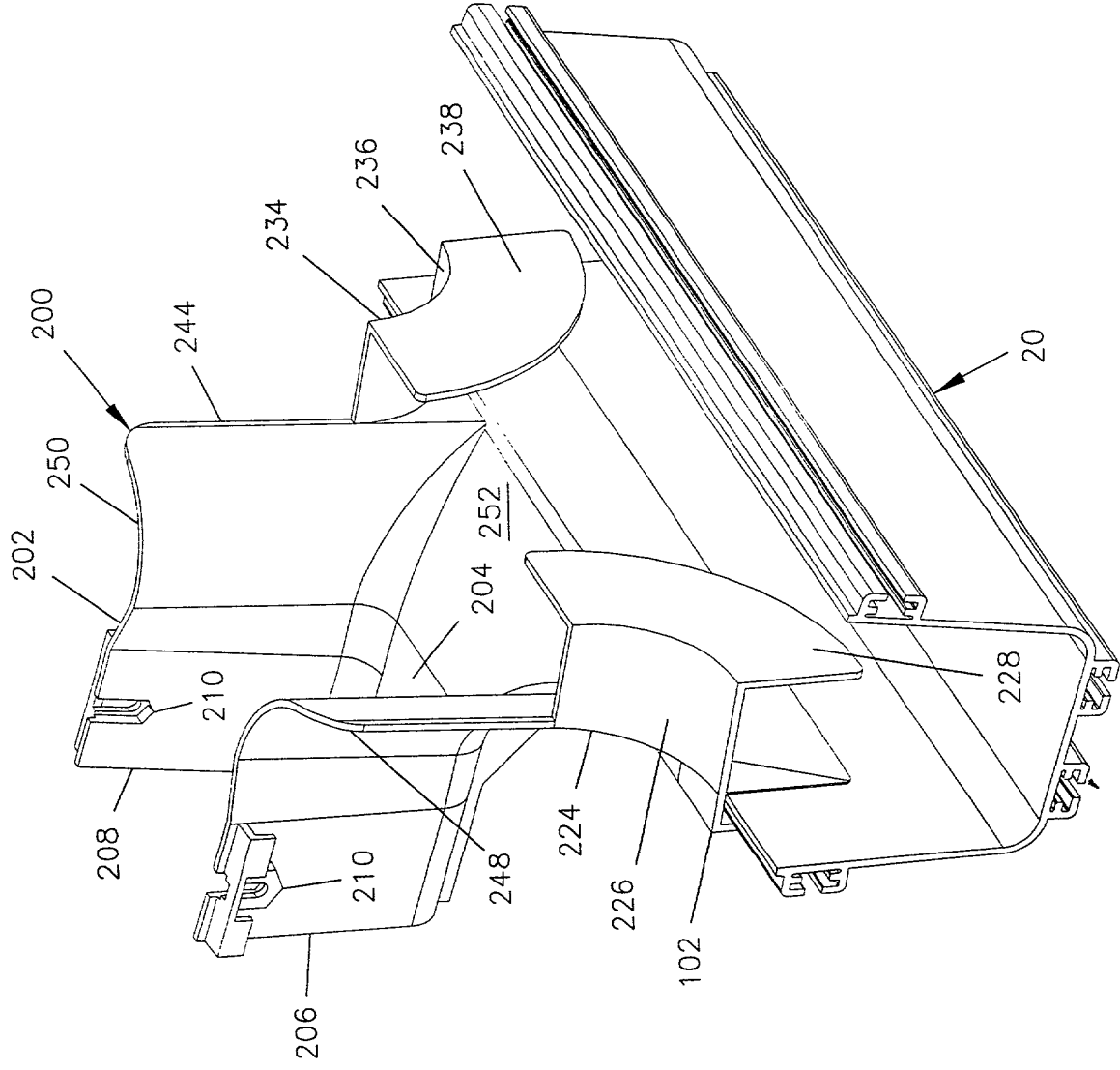


FIG. 10

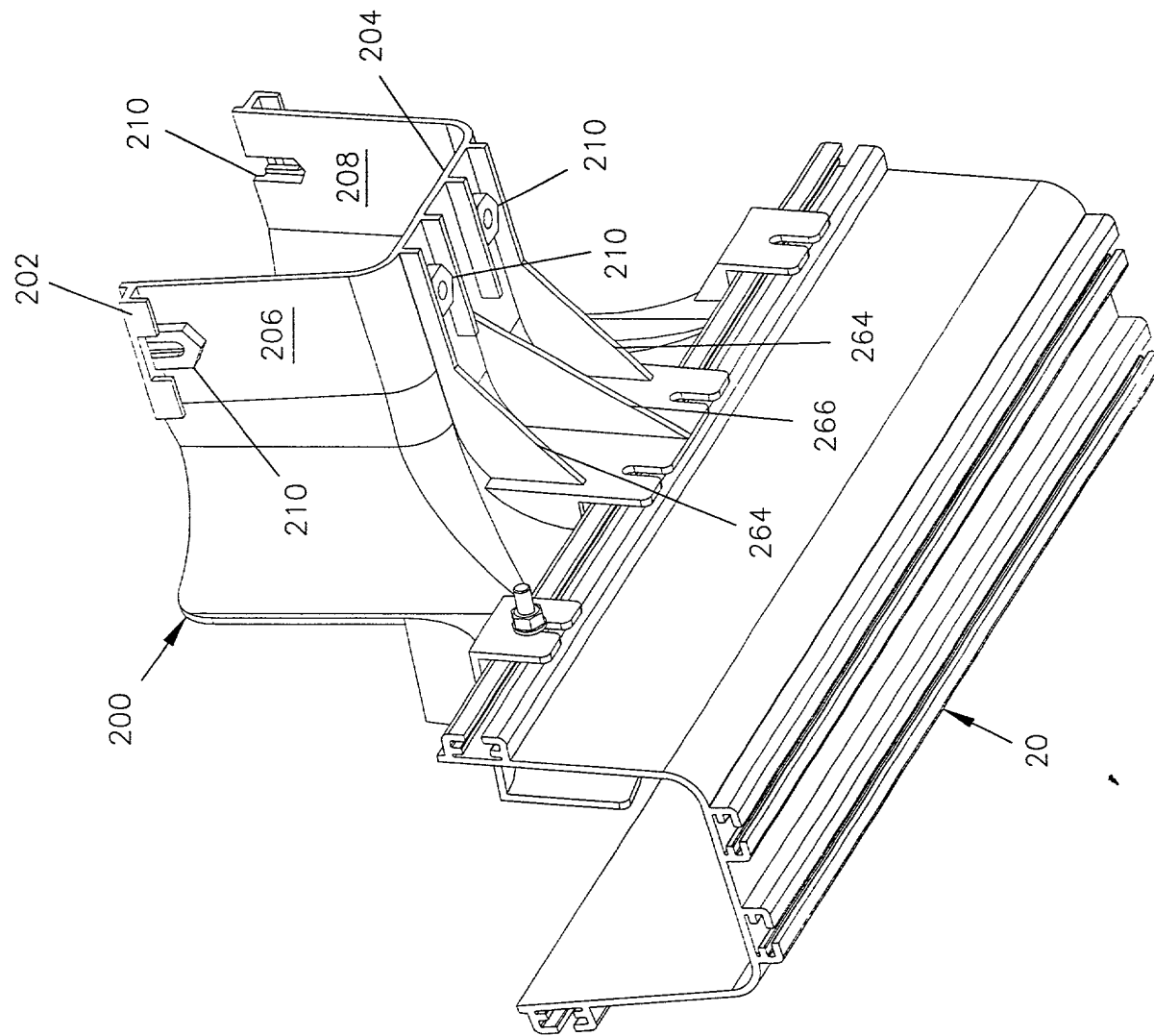


FIG. 11

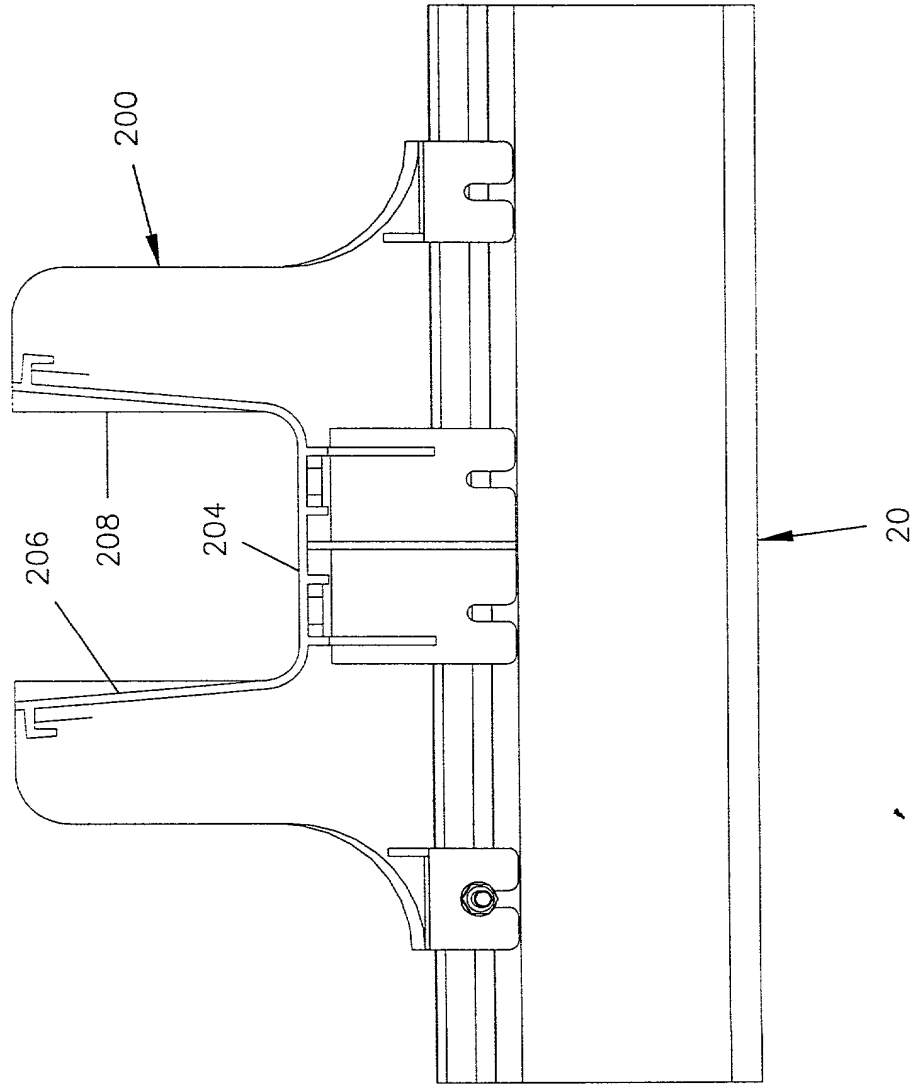


FIG. 12

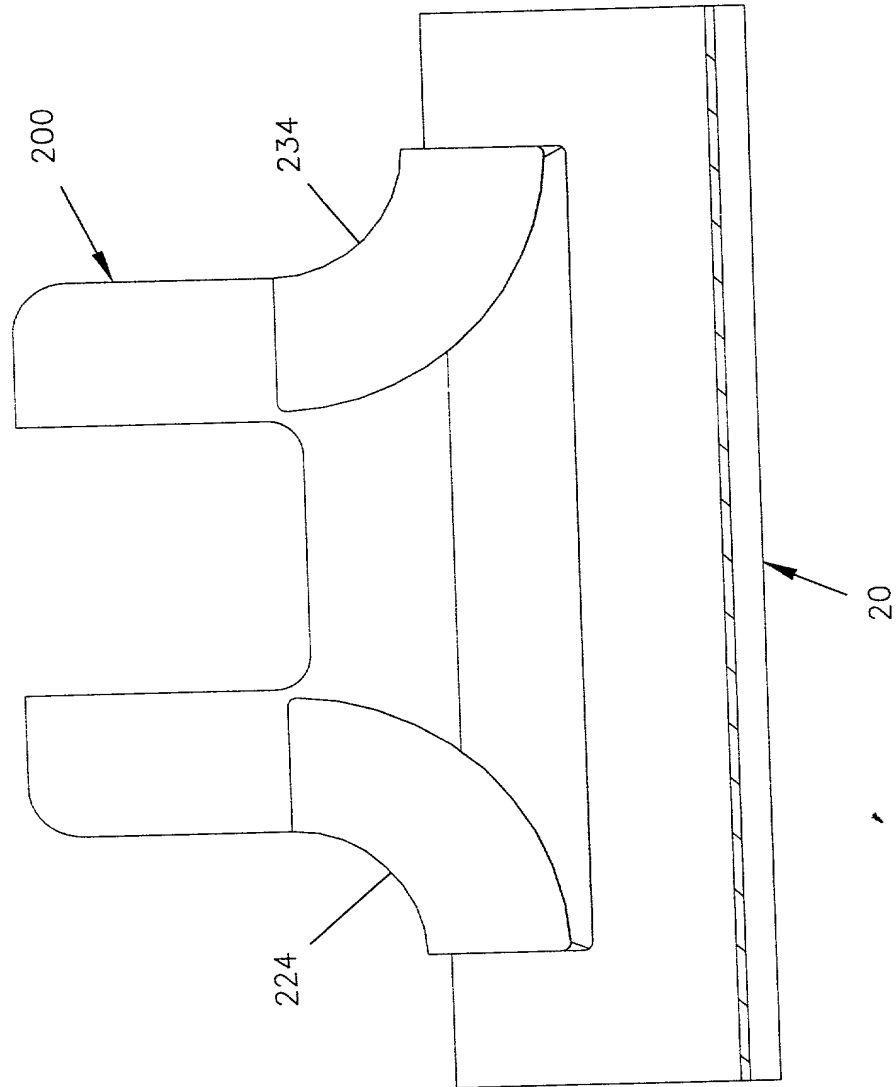


FIG. 13

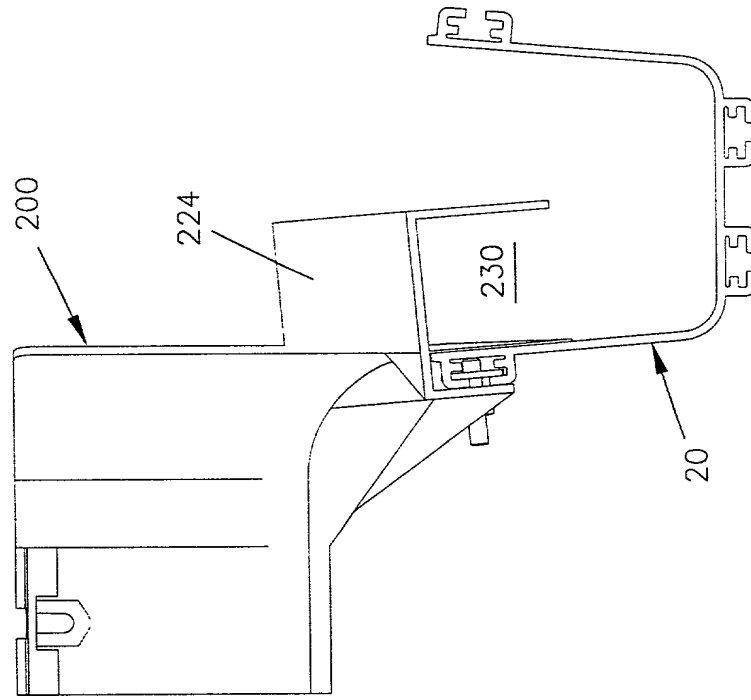


FIG. 14

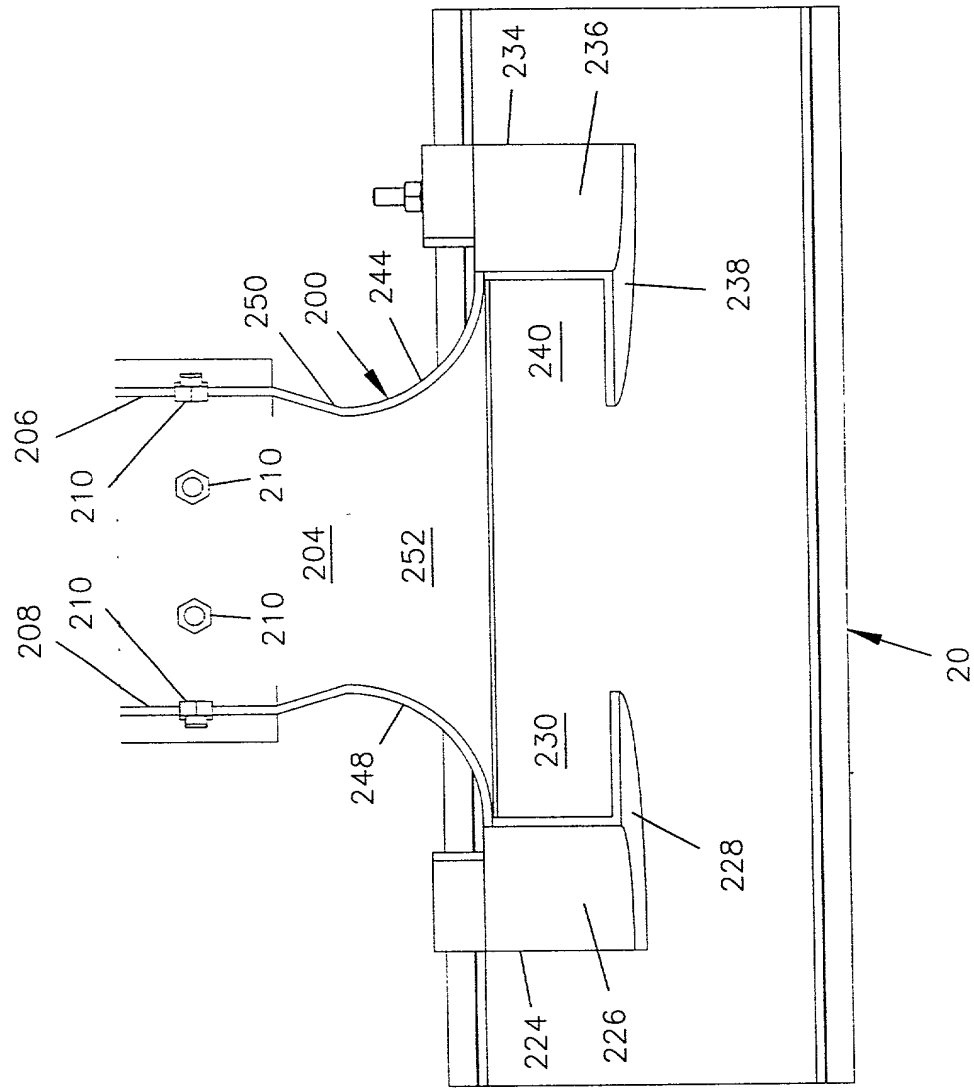


FIG. 15

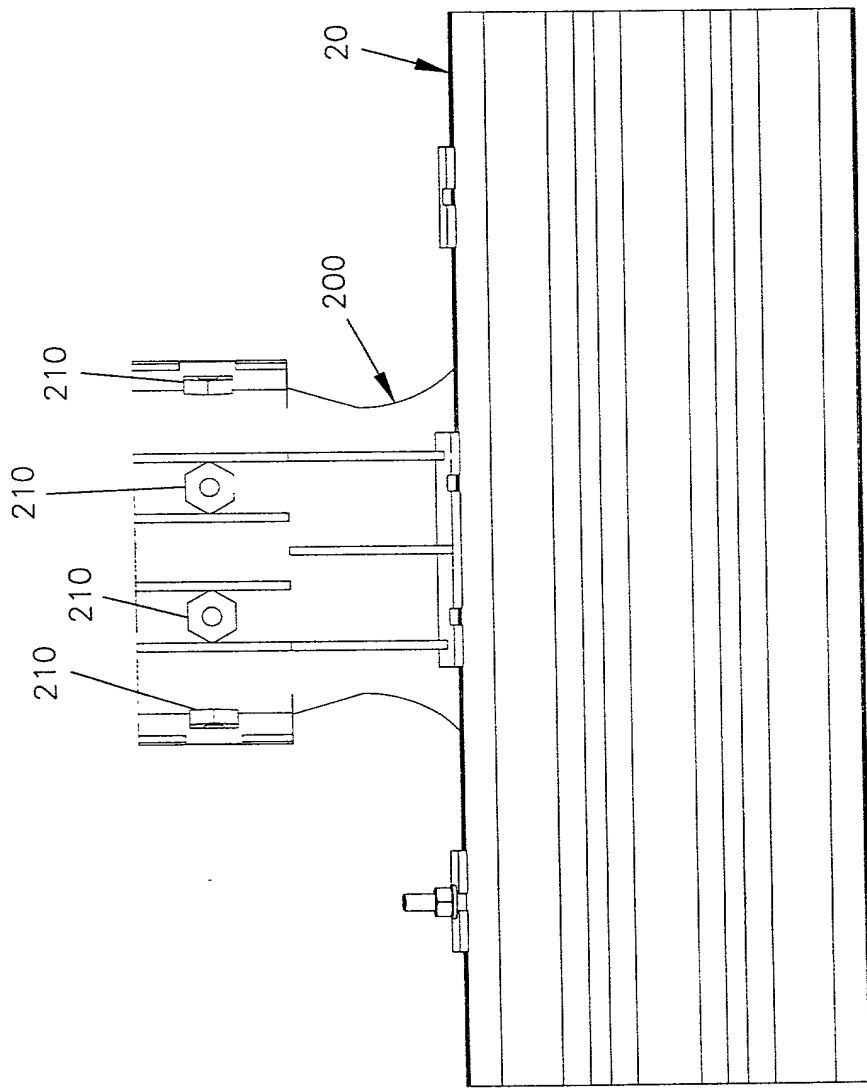
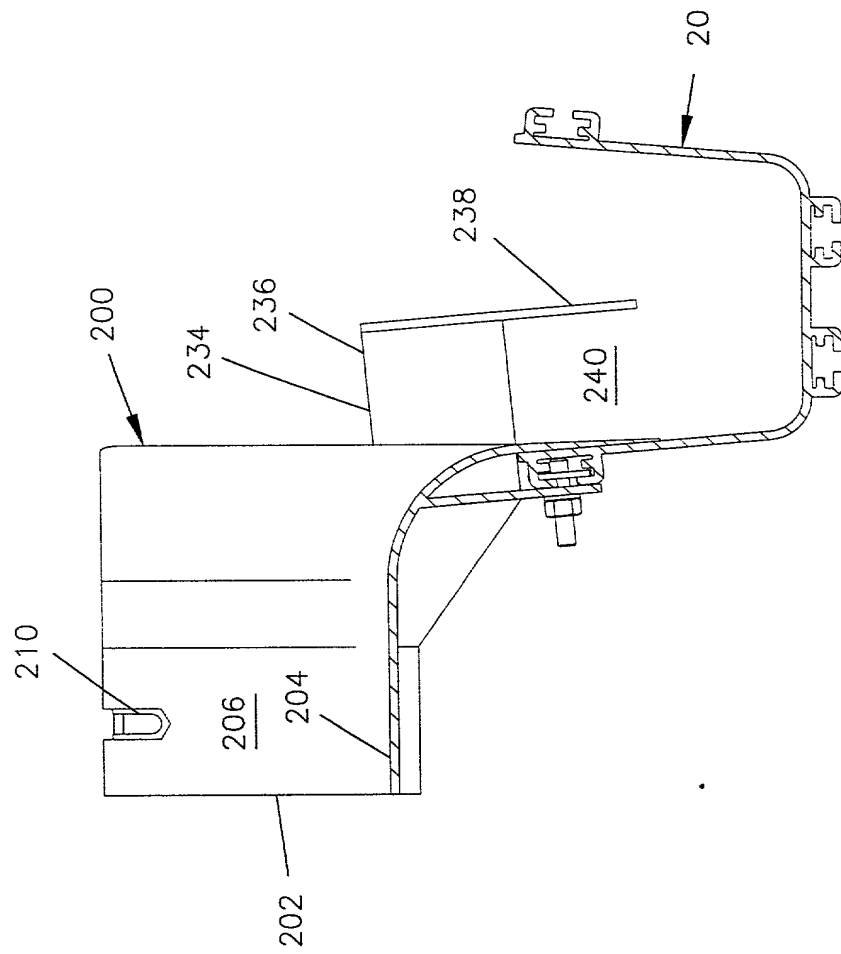


FIG. 16



United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: OPTICAL CABLE EXIT TROUGH.

The specification of which

- a. ☐ is attached hereto
- b. ☒ was filed on November 17, 1997 as attorney docket no. 2316.868-US-01 and was amended on (if applicable) (in the case of a PCT-filed application) described and claimed in international no. filed and as amended on (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

- a. ☒ no such applications have been filed.
- b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Adriano, Sarah B.	Reg. No. 34,470	Kowalchyk, Katherine M.	Reg. No. 36,848
Albrecht, John W.	Reg. No. 40,481	Lacy, Paul E.	Reg. No. 38,946
Batzli, Brian H.	Reg. No. 32,960	Larson, James A.	Reg. No. 40,443
Beard, John L.	Reg. No. 27,612	Lasky, Michael B.	Reg. No. 29,555
Beck, Robert C.	Reg. No. 28,184	Lindquist, Timothy A.	Reg. No. 40,701
Berman, Charles	Reg. No. 29,249	Lynch, David W.	Reg. No. 36,204
Bogucki, Raymond A.	Reg. No. 17,426	Mau, Michael L.	Reg. No. 30,087
Bruess, Steven C.	Reg. No. 34,130	Maunu, Leroy D.	Reg. No. 35,274
Byrne, Linda M.	Reg. No. 32,404	McDaniel, Karen D.	Reg. No. 37,674
Canady, Karen S.	Reg. No. 39,927	McDonald, Daniel W.	Reg. No. 32,044
Carlson, Alan G.	Reg. No. 25,959	McIntyre, Iain A.	Reg. No. 40,377
Carter, Charles G.	Reg. No. 35,093	Mueller, Douglas P.	Reg. No. 30,300
Caspers, Philip P.	Reg. No. 33,227	Nasiedlak, Tyler L.	Reg. No. 40,099
Chiapetta, James R.	Reg. No. 39,634	Nelson, Albin J.	Reg. No. 28,650
Clifford, John A.	Reg. No. 30,247	Orler, Anthony J.	Reg. No. 41,232
Conrad, Timothy R.	Reg. No. 30,164	Pauly, Daniel M.	Reg. No. 40,123
Cooper, Victor G.	Reg. No. 39,641	Plunkett, Theodore	Reg. No. 37,209
Crawford, Robert	Reg. No. 32,122	Pollinger, Steven J.	Reg. No. 35,326
Daignault, Ronald A.	Reg. No. 25,968	Pytel, Melissa J.	Reg. No. P-41,512
Daley, Dennis R.	Reg. No. 34,994	Reich, John C.	Reg. No. 37,703
Dalglish, Leslie E.	Reg. No. 40,579	Reiland, Earl D.	Reg. No. 25,767
Daulton, Julie R.	Reg. No. 36,414	Rittmaster, Ted R.	Reg. No. 32,933
DiPietro, Mark J.	Reg. No. 28,707	Schmaltz, David G.	Reg. No. 39,828
Edell, Robert T.	Reg. No. 20,187	Schmidt, Cecil C.	Reg. No. 20,566
Epp Ryan, Sandra	Reg. No. 39,667	Schuman, Mark D.	Reg. No. 31,197
Farber, Michael B.	Reg. No. 32,612	Schumann, Michael D.	Reg. No. 30,422
Funk, Steven R.	Reg. No. 37,830	Sebald, Gregory A.	Reg. No. 33,280
Gates, George H.	Reg. No. 33,500	Sharp, Janice A.	Reg. No. 34,051
Glance, Robert J.	Reg. No. 40,620	Skoog, Mark T.	Reg. No. 40,178
Golla, Charles E.	Reg. No. 26,896	Smith, Jerome R.	Reg. No. 35,684
Gorman, Alan G.	Reg. No. 38,472	Sumner, John P.	Reg. No. 29,114
Gould, John D.	Reg. No. 18,223	Sumners, John S.	Reg. No. 24,216
Gresens, John J.	Reg. No. 33,112	Tellekson, David K.	Reg. No. 32,314
Hamre, Curtis B.	Reg. No. 29,165	Underhill, Albert L.	Reg. No. 27,403
Hillson, Randall A.	Reg. No. 31,838	Vandenburgh, J. Derek	Reg. No. 32,179
Hollingsworth, Mark A.	Reg. No. 38,491	Victor, David W.	Reg. No. 39,867
Johnston, Scott W.	Reg. No. 39,721	Welter, Paul A.	Reg. No. 20,890
Kastelic, Joseph M.	Reg. No. 37,160	Williams, Douglas J.	Reg. No. 27,054
Kettelberger, Denise	Reg. No. 33,924	Wood, Gregory B.	Reg. No. 28,133
Komanduri, Janaki	Reg. No. 40,684	Xu, Min S.	Reg. No. 39,536
Kowalchyk, Alan W.	Reg. No. 31,535		

I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless until I instruct Merchant, Gould, Smith, Edell, Welter & Schmidt to the contrary.

Please direct all correspondence in this case to Merchant, Gould, Smith, Edell, Welter & Schmidt at the address indicated below:

Merchant, Gould, Smith, Edell,
Welter & Schmidt
3100 Norwest Center
90 South Seventh Street
Minneapolis, MN 55402-4131

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2	Full Name Of Inventor	Family Name Haataja	First Given Name Timothy	Second Given Name Jon
0	Residence & Citizenship	City Prior Lake	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
1	Post Office Address	Post Office Address 18935 Natchez Avenue	City Prior Lake	State & Zip Code/Country Minnesota 55372 U.S.A.
Signature of Inventor 201:				Date:
2	Full Name Of Inventor	Family Name Kampf	First Given Name Thomas	Second Given Name Walter
0	Residence & Citizenship	City Minnetonka	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
2	Post Office Address	Post Office Address 5606 Pompano Drive	City Minnetonka	State & Zip Code/Country Minnesota 55343 U.S.A.
Signature of Inventor 202: <i>Thomas Walter Kampf</i>				Date: <i>12/2/97</i>

§ 1.56 Duty to disclose information material to patentability.

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application:

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.



As a below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: OPTICAL CABLE EXIT TROUGH

The specification of which

a. ☒ is attached hereto

b. ☐ was filed on as application serial no. and was amended on (if applicable) (in the case of a PCT-filed application) described and claimed in international no. filed and as amended on (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (attached hereto).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

a. ☒ no such applications have been filed.

b. ☐ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I hereby appoint the following attorney(s), and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

Adriano, Sarah B.	Reg. No. 34,470	Kowalchyk, Katherine M.	Reg. No. 36,848
Albrecht, John W.	Reg. No. 40,481	Lacy, Paul E.	Reg. No. 38,946
Batzli, Brian H.	Reg. No. 32,960	Larson, James A.	Reg. No. 40,443
Beard, John L.	Reg. No. 27,612	Lasky, Michael B.	Reg. No. 29,555
Beck, Robert C.	Reg. No. 28,184	Lindquist, Timothy A.	Reg. No. 40,701
Berman, Charles	Reg. No. 29,249	Lynch, David W.	Reg. No. 36,204
Bogucki, Raymond A.	Reg. No. 17,426	Mau, Michael L.	Reg. No. 30,087
Bruess, Steven C.	Reg. No. 34,130	Maunu, Leroy D.	Reg. No. 35,274
Byrne, Linda M.	Reg. No. 32,404	McDaniel, Karen D.	Reg. No. 37,674
Canady, Karen S.	Reg. No. 39,927	McDonald, Daniel W.	Reg. No. 32,044
Carlson, Alan G.	Reg. No. 25,959	McIntyre, Iain A.	Reg. No. 40,377
Carter, Charles G.	Reg. No. 35,093	Mueller, Douglas P.	Reg. No. 30,300
Caspers, Philip P.	Reg. No. 33,227	Nasiedlak, Tyler L.	Reg. No. 40,099
Chiapetta, James R.	Reg. No. 39,634	Nelson, Albin J.	Reg. No. 28,650
Clifford, John A.	Reg. No. 30,247	Orler, Anthony J.	Reg. No. 41,232
Conrad, Timothy R.	Reg. No. 30,164	Pauly, Daniel M.	Reg. No. 40,123
Cooper, Victor G.	Reg. No. 39,641	Plunkett, Theodore	Reg. No. 37,209
Crawford, Robert	Reg. No. 32,122	Pollinger, Steven J.	Reg. No. 35,326
Daignault, Ronald A.	Reg. No. 25,968	Pytel, Melissa J.	Reg. No. P-41,512
Daley, Dennis R.	Reg. No. 34,994	Reich, John C.	Reg. No. 37,703
DalGLISH, Leslie E.	Reg. No. 40,579	Reiland, Earl D.	Reg. No. 25,767
Daulton, Julie R.	Reg. No. 36,414	Rittmaster, Ted R.	Reg. No. 32,933
DiPietro, Mark J.	Reg. No. 28,707	Schmaltz, David G.	Reg. No. 39,828
Edell, Robert T.	Reg. No. 20,187	Schmidt, Cecil C.	Reg. No. 20,566
Epp Ryan, Sandra	Reg. No. 39,667	Schuman, Mark D.	Reg. No. 31,197
Farber, Michael B.	Reg. No. 32,612	Schumann, Michael D.	Reg. No. 30,422
Funk, Steven R.	Reg. No. 37,830	Sebald, Gregory A.	Reg. No. 33,280
Gates, George H.	Reg. No. 33,500	Sharp, Janice A.	Reg. No. 34,051
Glance, Robert J.	Reg. No. 40,620	Skoog, Mark T.	Reg. No. 40,178
Golla, Charles E.	Reg. No. 26,896	Smith, Jerome R.	Reg. No. 35,684
Gorman, Alan G.	Reg. No. 38,472	Sumner, John P.	Reg. No. 29,114
Gould, John D.	Reg. No. 18,223	Sumners, John S.	Reg. No. 24,216
Gresens, John J.	Reg. No. 33,112	Tellekson, David K.	Reg. No. 32,314
Hamre, Curtis B.	Reg. No. 29,165	Underhill, Albert L.	Reg. No. 27,403
Hillson, Randall A.	Reg. No. 31,838	Vandenburgh, J. Derek	Reg. No. 32,179
Hollingsworth, Mark A.	Reg. No. 38,491	Victor, David W.	Reg. No. 39,867
Johnston, Scott W.	Reg. No. 39,721	Welter, Paul A.	Reg. No. 20,890
Kastelic, Joseph M.	Reg. No. 37,160	Williams, Douglas J.	Reg. No. 27,054
Kettelberger, Denise	Reg. No. 33,924	Wood, Gregory B.	Reg. No. 28,133
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2	Full Name Of Inventor	Family Name Haataja	First Given Name Timothy	Second Given Name Jon
0	Residence & Citizenship	City Prior Lake	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
1	Post Office Address	Post Office Address 18935 Natchez Avenue	City Prior Lake	State & Zip Code/Country Minnesota 55372 U.S.A.
Signature of Inventor 201: <i>Timothy Jon Haataja</i>			Date: <i>11/17/97</i>	
2	Full Name Of Inventor	Family Name Kampf	First Given Name Thomas	Second Given Name Walter
0	Residence & Citizenship	City Minnetonka	State or Foreign Country Minnesota	Country of Citizenship U.S.A.
2	Post Office Address	Post Office Address 5606 Pompano Drive	City Minnetonka	State & Zip Code/Country Minnesota 55343 U.S.A.
Signature of Inventor 202: <i>[Signature]</i>			Date: <i>[Signature]</i>	

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